

Espinas y Flores

BULLETIN OF THE SAN DIEGO CACTUS AND SUCCULENT SOCIETY
Affiliate of the Cactus and Succulent Society of America, Inc.

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TOMO OCHO, NUMERO ONCE
.....

NOVIEMBRE 1972

ENDANGERED SPECIES

UNIVERSAL CONCERN

Washington (UPI) 1972

INTERVIEW:

The animal kingdom isn't the only one around suffering from a bad case of endangered species. Conservationists are alarmed about species of the vegetable kingdom that seem likely to go the way of such animals as the dodo, great auk and passenger pigeon unless something is done to rescue them.

Among those concerned is Anders S. Saustrup of the Rare Plant Study Center of the University of Texas. He made a gesture and remarked, "Those seven are the only ones in captivity." He was talking about the Texas pistachio, once flourishing but now endangered because its only known habitat, at the juncture of the Rio Grande and Pecos Rivers, has been flooded by a dam.

The Rare Plant Center was established in 1971 at Austin to "prevent the extinction of rare and endangered species of native plants and to promote survival of uncommon and desirable species of native trees, shrubs, wildflowers and grasses." A University report quotes Saustrup as saying: "We're dealing with a real emergency. Remaining natural areas are disappearing at an alarming rate of speed. Plant species are disappearing before we get to know them."

The Rare Plant Center is trying to do for endangered plants what many zoos are trying to do for threatened animals -- to nurture them and find survival homes for them. This means resorting "to artificial means to keep the balance of nature intact." The Austin center apparently "is the only organized effort at locating, propagating, and preserving these rare plants."

Many persons are worried because the whooping crane population "is down to 60 to 70." But some species of trees in Texas "are down to three or four." "Right now" according to Saustrup, "There are fully 100 species of native plants, a third of them found nowhere but in Texas, that are considered rare and endangered." The Center's hope is to cultivate such plants "in captivity" and distribute them to parks, botanical gardens, and arboretums "where they will be assured of reasonable care."

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Thanks to J. Warner Dodd of Phoenix for sending the above interview to "E y F".
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"Sunshine is delightful, rain is refreshing, snow beautifies the landscape and clouds temper the sunshine. Really there's no such thing as bad weather, it's simply variations of good weather."
..... A. Weatherman

CONSERVATION AT HOME
CSSA--PANEL DISCUSSION

Gary LYONS, Chas. GLASS
Jay DODSON, Kathryn SABO
Peter VANDEMARK

Serious and provocative questions were raised by panel members on CONSERVATION OF PLANTS in general and endangered species in particular. The discussion could prove to be a preview of future thought and activity by the Cactus & Succulent Society of America.

ITEM 1 --- What constitutes an "endangered species"? A distinction probably should be made as to whether the plant is endangered by man or by natural forces, perhaps the same sort that have affected evolution of new plant populations over past years.

ITEM 2 --- When some plants are removed from an area others may take over, but will they be desirable or interesting? It isn't easy for collectors to eliminate a particular species. Besides the range may be much more extensive than at first believed and also other populations are likely to be found.

ITEM 3 --- How much are plant populations being disturbed by land use as an example? Mr. Vandemark pointed out changes being made in Baja California. Upon completion of Highway "Numero Uno" as a paved highway in 1973 for the length of the peninsula. Numero Uno will result in more land development, more commercial ventures and an explosive increase in tourism. Cooperating with the Mexican Government, Mr. Vandemark and associates are organizing a foundation to be called "Conservacion Silvestre" which will be aimed not only toward the preservation of plants and natural features but historic landmarks such as the chain of Missions down the peninsula.

ITEM 4 --- What measures can be taken to preserve species that are truly endangered? Some alternatives were discussed. For example when roads are to be built and land cleared, it would be desirable to have interested organizations notified for the purpose of rescuing plants subject to destruction. Such is a goal of Conservacion Silvestre in Baja Calif. It is already being accomplished to a degree in Arizona thru cooperation of the Arizona Highway Dept., the Desert Botanical Garden, the Arizona-Sonora Desert Museum and other conservation-minded groups.

ITEM 5 --- Bringing plants into cultivation thru seed raising and distribution may be the only answer for some small populations whose habitats are being destroyed.* Reseeding habitat areas or repopulating with nursery-grown seedlings was generally felt to be unsatisfactory because of high mortality rate in seedlings and because of inadequate knowledge regarding the return of plants to proper areas. Simply using the same species would not be the answer if seeds were from a different population.

ITEM 6 --- Another solution being pursued by some organizations is the purchase of land in order to maintain it in its natural state. This involves purchase expense followed by maintenance and protection. It does provide a way by which society can participate by working with major conservation groups in land acquisition and conservation.

ITEM 7 --- Which areas should be preserved and which species are endangered? Some info can be obtained thru the "International Union for the Conservation of Nature" at England's Kew Garden.

ITEM 8 --- Perhaps the key idea developed during the discussion was that the whole subject of conservation is becoming more and more vital, and it is a matter which each individual must resolve in his own conscience.

"Espinass y Flores" is grateful for the above report submitted by Ed & Betty Gay

**Nolina interrata* is a native San Diego County species of limited area and population which happens to be in the pathway of a proposed "industrial expansion project".

"Behold the man!"

With regard to my previous article in the October issue of *Espinas y Flores* titled "ERA - PERIOD - EPOCH" I wish to say that all statements made and conclusions reached are entirely my own thinking after many years of study, some research of my own and observations made in many parts of the world during my lifetime. Facts were stored computer-like in my mind and in late years have been reassayed and found to be logical. Space in this bulletin precludes detailed and minute discussion of subject matter so I'll briefly outline my thinking per se.

In the PALEOZOIC ERA which encompassed a half billion years in time, we had the first critical change in the DEVONIAN PERIOD which was 325-280 million years ago. From the sea came

forth the reptiles, amphibians and land plants. The plants were all small, less than two feet high. They reproduced by spores and in many ways resembled the seaweeds, whence they came. The *Rhynia*, *Psilophyton* (baldheaded family), *Asteroxylon* (starwood), *Hornea* (devil). All lived in marshy inlets where the temperature was above normal over all the Earth. All reptilian life was miniaturized.

The PALEOZOIC ERA closed with the PERMIAN PERIOD which ushered in the second critical period 230 million years ago. Coniferous trees first came upon the scene, *Ullmannia* had cones, Star pines and monkey-puzzle trees also came. Small lizards were present in the vast savannahs and they were the forebears of the giant dinosaurs yet to come forth upon the Earth. The Earth's climate moderated and cooled, great winds arose and swept across the land carrying loess from higher reaches of land to the estuaries.

Between the Devonian-critical period and the Permian-critical period, we had the age of greatest growth the Earth ever experienced. The Carboniferous Period of fifty million years brought forth the fern-like plants, the *Calamites* or horsetail rushes of tree size, *Sigillaria* (bottle brushes), *Lepidodendrons* (scale ferns), *Cordiates* that looked like yuccas with smooth trunks. The weather was warm to hot and very humid. The rainfall was acidic, sulphuric, and nitrogenous. Much vulcanism continued which caused orogenic (mountain making) movement. Mountains were cast up and then destroyed by wind, rains and acids and torrential waters carrying the detritus to alluvial fans.

The MESOZOIC ERA in its entirety encompassed 130 million years starting with the Triassic Period of 35 million years, the Jurassic of 30 million years, and then the Cretaceous Period of about 65 million years, which to my way of thinking was the third and final step in preparation for Man's coming to reign over the Earth.

In fact we were to see the coming of great mastodons, elephants, bisons, camels, huge dinosaurs, and flying creatures--all of which needed skeletons. Without calcium no creature could have become large or have walked upon the earth away from the sea which had spawned it previously as a worm or slimy creature. No plant or animal can grow and carry a heavy weight without a bony (calcium) structure. We observe that when calcium became plentiful in the waters that flowed from the receding glaciers of those ages, we had the start of the *Sequoia sempervirens* and the redwoods; *Clathropteris* (trellis-scout); *Lacopteris* (lake or pond seekers) the latter two being related to ferns. There were *Cycads*, *Ginkgo* (Maidenhair trees).

E-C-C-E H-O-M-O

"Behold the man!"

-- Continued --

Conifers are known in this (Cretaceous) period. Most of our knowledge of the Triassic and Jurassic Periods is found in Germany, whence came the name from the "Jural" Mountains.

With an abundance of calcium, we had the beginning of teeth wherewith creatures could masticate cereals, bone, etc. Some creatures built external protection as was the case with the tortoise. Others developed horns, hooves, internal skeletons that permitted rapidity of movement either to avoid danger or to facilitate their search for food.

There is one strange fact which I must call to your attention. Calcium is the one element of the planet that dissolves best in cold water. The waters of the glaciers rasped away at the land and carried to the sea the dissolved salts in the vast ice-cold rivers that eroded our landscape. When calcium salts meet the delta waters laden with other salts that are of warmer origin, they cement and form sandstone and this sinks to the bottom of lakes, rivers, seas and build upon other layers forever and ever.

This layering produces an insulating effect which keeps the Earth's heat within and as the layers grow in depth, the heat increases until the magma underneath erupts and intrudes into the upper layers or flows along the sea bottom.

In Titus Canon in Death Valley one can view strata or rock laid down in the form of lenses and later covered with deposits that permitted the Earth's heat to metamorphose (to change the form of) the lense of arenaceous (sand like) material and then completely convolute it like a great wheel of colored stone. I have seen shells that were heated and subjected to great pressures while buried deep in the Earth that were twisted and contorted, yet remained entirely intact. A large out-cropping exists on the Charles Hufford ranch near Redding, California. Also near Beatty, Nevada, where Bob Nelson and I did much investigating while camped at Stove Pipe Wells

It is to be remembered that only in the last 150 million years have we had seasons. Until the clouds parted and ended the eternal rains, and permitted the sun to shine upon us, was it possible for life as we know it to evolve. When you pause to think that Man has been with us as "Ecce Homo" for a million-plus years, you can readily understand that our time here is indeed very brief. It is interesting to observe that Man's place in the Universe is just half-way between the Sun and an atom.

*Ecce homo": The words of Pilate as he presented Christ, crowned with thorns, to his accusers.

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LETTERS TO THE EDITOR:

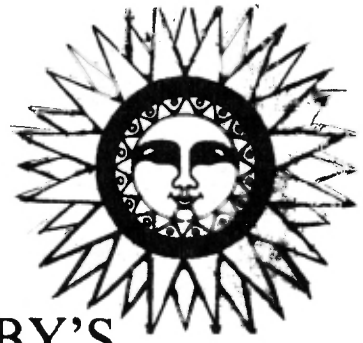
"Dear Mr. Scott: Please be advised our copy of "E y F", October, has not been received as of this date, Oct. 12, 1972. _____ got his copy last week so I feel mine went the way of our very efficient P. O. Question Box. I hope whoever got it via P. O. "reroute" enjoys it. Will you please mail me a copy, postage inclosed." KWK (Sorry about that, the P.O., copy in the mail, Ed)

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YE ED has received a request from an eastern College for a copy of Tomo Ocho, Espinas y Flores, for its library. Tomo Ocho will be sent at year's end. (Is it possible garden club publications may be approaching academic or literary stature? Is there someone in the Club who feels competent, and who will volunteer to "interpret/decipher" the response (if any) and translate it into garden club lingo, assuming, of course, you have full "botanic license". Would you volunteer, Tony?Ed)

ADVICE TO A SMALL CACTUS

Oh, little cactus growing there
Upon the mountainside, beware!
This is the time (the tourist season)
When collectors roam, and for no reason
Will search you out with fevered eye;
Will dig you up...then let you die.
So hide - oh, hide if you can your blooming.
The deadliest predators are human!

(Edith Bestard)



NIBBY'S
NOTEBOOK

The Pleasure

was ours at the last meeting -- now THAT was a PROGRAM! Well worth waiting for, wasn't it, Scotty? Too bad Floyd missed being there...he was home with bronchitis when Don Kruzner presented a magnificent afternoon, a flight from reality. Don is a "school teacher" with a Ph.D., retired from the University of Washington. He and his wife Nancy have been making life exciting with time-lapse photography. The films he showed were taken every 10 seconds and shown 24 frames per second.

Countless-per-second vibrations were felt from the flower of the orange "tuna", pulsating with life and color...red-orange, orange-orange, yellow-orange...the Life Force visible with this speeded up process. We could hardly believe our eyes -- the secret of rotating anthers exposed in the red-flowering "Hedgehog" cactus -- the anthers actually swirled all around the green pistil! Don said botanist friends had been amazed, too.

Bob and Suzanne Taylor might have been touring El Rosario, Baja, in the flesh -- but they were with us on film and so was their cactus garden.

"THE REALM OF THE STARFISH", second feature filmed under water. One of the many-rayed starfish had been turned upside down with a light underneath. Sensuous slow-motion rolling, graceful and hypnotic, of each ray separately righting itself...translucent tentacles glowing orange...most exotic! For contrast, clip-clapping clams sprightly popping about gathering a quick lunch. And then the free-swimming rarely seen white anemone -- rarely seen free swimming, that is. Complete fantasy!

Music and sound track, too. One of our all-time **great** programs.

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We'll try to keep you posted when it's on TV later this year...also, Don mentioned in passing that he had filmed the LOVELIFE OF THE PEACOCK...including the peahen, of course...Hmmm.

Mildred Gregory remarked during the film that she understood where the phrase "busy as a bee" originated...Mildred brought you yet another variety of Aeonium, Floyd, and I'll bring it next meeting for you...

Ruth Stanton won Succulent-of-theMonth award for her splendid display of Echeverias...names like Gypsy, Cinderella, Paul Bunyon, Cameo...plus one she asked to be identified. Ruth Richardson (better known as Ruthie) giggled, "I'll name it for you -- let's call it RUTHIE!"

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NIBBY'S NOTEBOOK Continued

Tony d'Attilio recommended removing the plantlet from the leaf as soon as it is formed -- and the same leaf will make another plantlet! Isn't reproduction wonderful? Ruth Stanton claims that Paul Bunyon "warts better in full sun and should have at least half sun".. Snap the flowering stalks off before buds open* and immediately pop in soil, somehow leaving a bit of air space, for further propogation...If your echeverias are growing leggy, cut off and reroot -- don't discard old stalk for it, too, will produce plants. ... "Echche" or "ek-e", one can find An Authority to back his pronunciation. (* 3-4 nodes for each piece)

Opuntia subulata blooms rarely and then has to be quite old. Martin Mooney brought one with a flower which is produced on the very tip of the branch. For Cactus-of-the-Month there was only one entry - Ferocactus who? and it, too, belonged to Martin.

Nellie Kennett's hoya took first place in the Open Class. Bill Nelson also gets a lot of bloom from hoyas. He grows his in spongy soil in the shade, trailing from a basket. He feeds it Thrive in the spring - or any other 16-5-5; when buds appear Bill changes to fish or 0-10-10. Rootbound, of course. An Illinois friend was a teadrinker and every evening poured any tea remaining on the hoyas -- exceedingly successful for her, so much so that she was plantsitting hoyas for miles around.

Cactophil Corliss brought a Hawaiian "blind snake" for viewing...it looks like a more muscular and wilful earthworm...he says Ocean Beach is infested. Helen Claydon teaches G-O-L-F, not gold as a tired typewriter reported last month... Lena May Rice was back with us again ...Mildred Gregory announced that Palomar's programs had been switched... you still have an opportunity to take in Charlie Glass & Bob Foster Saturday November 18th at the Palomar meeting. They, too, present an excellent program.

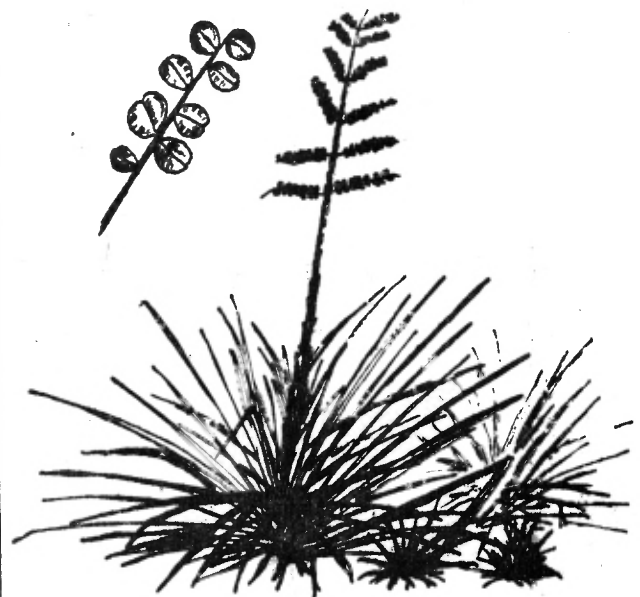
Reed Pierce is a familiar name, somehow, and now we know him by sight-- he's that husky blond young man--will be interested to see his questionnaire to verify that he works with Tony at the Museum of Natural History.

It's always a pleasure to talk to Emily Parks. "How are you, Emily?" "Very good -- I'm going to climb Mount Everest tomorrow!"

Maria Fisher is a native of Guadalupe and is planning a trip to Jalisco next May. Her Marine husband isn't interested in cactus?

That was Walt Greenwood who called numbers for the Plant Drawing.

WILDLIFE HERITAGE

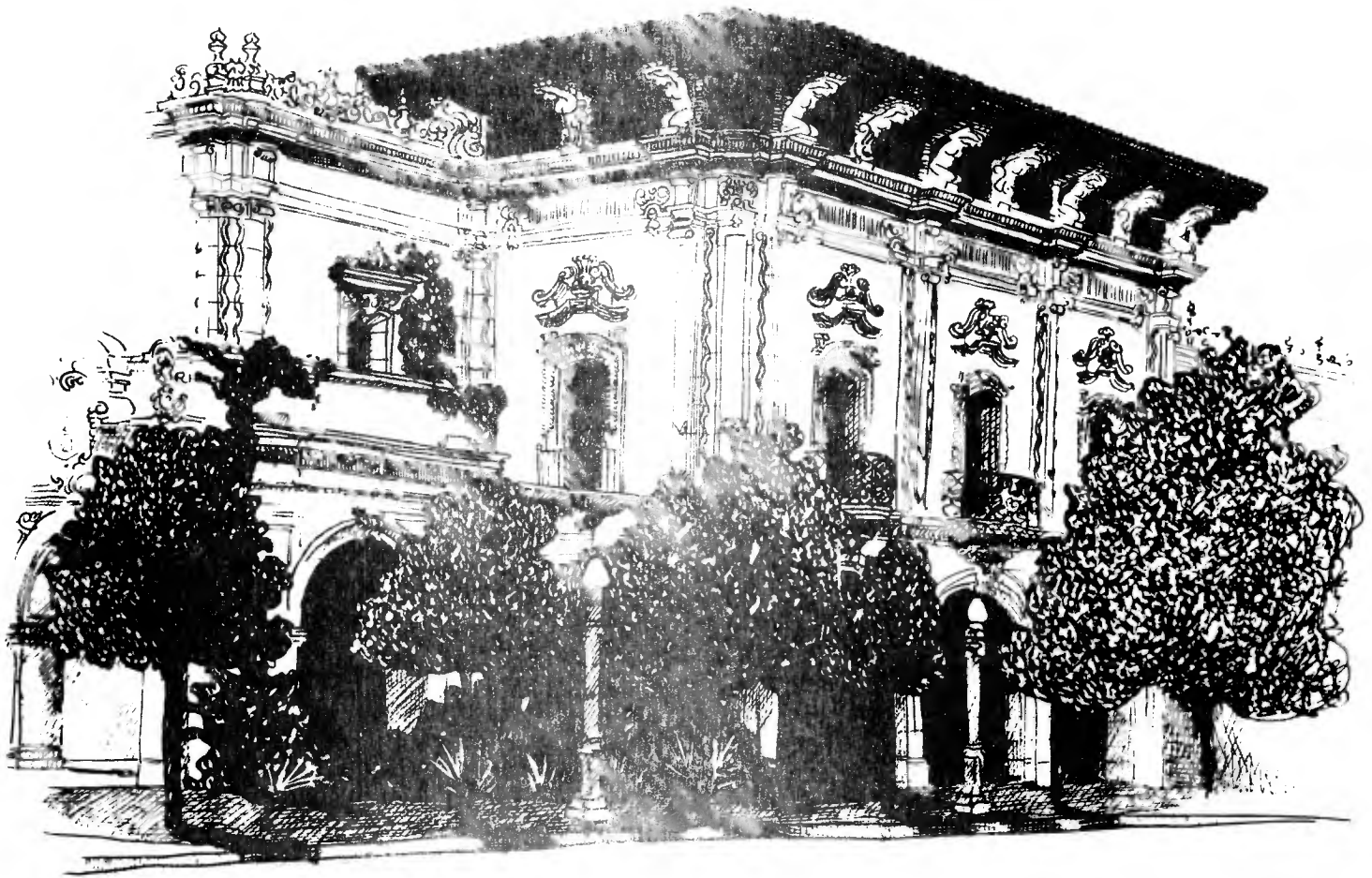


By RON LA ROSA

The Dehesa beargrass is a member of the Agave family, and this species, *Nolina interrata*, is found only in a small area of San Diego County. Other species of beargrass grow in the mountains and deserts of California and Arizona. Because of its limited distribution, the Dehesa beargrass is considered a rare plant species.

(Courtesy of THE SAN DIEGO UNION)

KEEP BALBOA PARK AS YOU KNOW AND LOVE IT.
PRESERVE YOUR HERITAGE.



The beauty of your Balboa Park is being threatened again. There is now a threat to destroy the deteriorating Electric Building. This would leave an ugly gap in El Prado, that avenue of beautiful buildings.

CONDITION OF THE ELECTRIC BUILDING

The exterior and ornamentation of the Electric Building is "staff" - a composition of casting plaster and hemp fiber - cast in molds and wired or nailed in place. It was never intended as permanent. When this building was built in 1915 its life expectancy was two years.

After 57 years the "staff" is in an extreme state of decomposition. Paint has given it an appearance of being sound and safe, but paint has no structural value.

To expect more low-cost service from this tired, overworked, temporary structure is unrealistic. It should be replaced now in permanent form. If this is done soon, the momentum of assembly and technical skills, construction experience from the rebuilding of the Casa del Prado, will not be lost.

The Casa del Prado is an example of what can be done by the concerned citizens of San Diego to preserve the unique quality of San Diego's world-famous park. With the completion of the Science Hall and Planetarium, and the Balboa Plaza with its spectacular fountain as a splendid terminus for El Prado, it becomes even more essential that the magnificent Electric Building be preserved as an integral part of the grand design.

NIBBY'S NOTEBOOK

But WHO brings the lovely driftwood that Helen Hegyi's number won? ... Lee Phelps gave us a reading of DESIDERATA (from Max Erman's Poems) to "give us a clue what he's all about"... and for an encore read our new by-laws... enough questions were asked to warrant another: Do we need an official parliamentarian? ... There are supposed to be two lines for refreshments, aren't there, Rose and Elvira? So don't pay attention when Warren Buckner tells you there aren't! ... Del Montague from GATES C&S and her husband were unfortunately late for the program but we hope they'll come again.

ANOTHER Society has been formed recently -- THE GERANIUM SOCIETY. Edith Werner, Reed Pierce, Perlso and Helen Howell have joined from our group.

Judy Krueger of Corpus Christi C&S wrote we were welcome to reprint the article we reprinted from STAR TO STAR last month...that she has a problem getting contributions from the membership - "I am constantly envious of the cooperation in your group."

Wilson & Alice Wells moved half a dozen truckloads of plants to their new home last year...at the meeting Wilson reported that "after the neighborhood had settled down, the fascinated kids appeared to ask about cactus plants"...so now the Wells find themselves sponsoring a real gone JUNIOR C&S SOCIETY. They brought a cool half dozen with them...and wouldn't it be altogether fitting and proper that our Society sponsor them, too? Alice pots from 17 to 25 sets of each succulent for the week. Their ages range from 3 to 12 and we have a list of their names... Which explains why the Wells were raiding the Drawing table after everyone else had finished. THAT activity puts MEANING into our stated purpose of being.

FLORAL ASSOCIATION is sponsoring a PATIO SALE as their part of Casa del Prado's first birthday celebration...they're also having a tour of the Queen Mary soon.

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Thank you,

DAVE GRIGSBY, and Mrs. Grigsby, for your warm hospitality...coffee & cookies...for giving us your day and for allowing us to roam all over your enchanted garden. Such a beautiful day...the flaming pink-coral of the kapok tree fluttering against the blue sky...foothills beyond and a collector's dream wherever we looked. It made the ugly thing that happened so much the more incredible. Dave Grigsby said: "Let's say no more about it. And above all, I hope that your members don't start speculating among themselves who did it." And so those of you who missed the trip but figured you would go next time...there will be no "next time" for groups...

The Grigsbys have a tremendous selection of happy plants, among them the BLUEST CACTUS we ever did see: Pilocereus glauca (escens?) but not yet on the market. Nor is their rooting medium. RECIPE: Perlite, redwood compost and charcoal...in the proper sizes and proportions worked out after much experimenting. It will be marketed as PDQ. Dave roots EUPHORBIAS in this mixture - MOIST and cozy warm - in a matter of days! Nelsons, Pfeiffers, d'Atillios, Hoffmans, Corwin & Dortehea deVotie, Helen Claydon & Ernie, Marcelle Barfield, Frances, Ione, Carol Jean Wolcott, Blanche Leondis, the sisters from Clairemont were among those present.

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We've got news for you !

A REAL SURPRISE OF THE MONTH!

Jim ("Better-dead-than-wed") Stalsonburg was married several weeks ago...which proves that you can't believe everything you read on a bumper sticker! His wife is a girl he has known for a number of years...the cagey character! CONGRATULATIONS and all those good things - may you both live happily ever after!

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CACTUS GENERA -- Alphabetical -- Compiled from:

DAS KAKTEENLEXICON, Curt Backeberg, 1970

Numbers preceding genera represent number of species in genus (according to CB)

12	Acanthocalycium	50	Cleistocactus	2	Glandulicactus
14	Acanthocereus	4	Clistanthocereus	3	Grusonia
2	Acantholobivia	5	Cochemia	10	Gymnocactus
5	Acanthorhopsalis	2	Coleocephalocereus	79	Gymnocalycium
1	Akersia	1	Coloradoa	3	Gymnocereus
4	Ancistrocactus	8	Consolea	48	Haageocereus
2	Anisocereus	44	Copiapoa	2	Hamatocactus
5	Aporocactus	16	Corryocactus	13	Harrisia
8	Arequipa	14	Corynopuntia	1	Haseltonia
4	Ariocarpus	67	Coryphantha	4	Hattiora
11	Armatocereus	3	Cryptocereus	1	Heliabravoa
2	Arrojadoa	43	Cylindropuntia	18	Helianthocereus
4	Arthrocareus	2	Deamia	3	Heliocereus
6	Astrophytum	1	Delaetia	1	Hertrichocereus
5	Austrocactus	1	Dendrocereus	1	Homalocephala
3	Austrocephalocereus	2	Denmoza	22	Horridocactus
20	Austrocylindropuntia	10	Discocactus	24	Hylocereus
14	Aylostera	13	Dolicothele	12	Islaya
1	Aztekium	1	Eccremocactus	1	Isolatocereus
2	Azureocereus	10	Echinocactus	3	Jasminocereus
1	Backebergia	86	Echinocereus	2	Krainzia
1	Bartschella	32	Echinofossulocactus	1	Lasiocereus
1	Bergerocactus	10	Echinomastus	6	Lemaireocereus
5	Blossfeldia	46	Echinopsis	4	Leocereus
5	Bolivocereus	3	Epiphyallanthus	2	Lepidocoryphantha
6	Borzicactus	1	Epiphyllopsis	19	Lepismium
1	Brachycalycium	20	Epiphyllum	11	Leptocereus
1	Brachycereus	3	Epithelantha	1	Leuchtenbergia
3	Brasilicactus	11	Erdisia	1	Leucostele
2	Brasilicereus	2	Eriocactus	1	Lobeira
4	Brasiliopuntia	9	Eriocereus	106	Lobivia
1	Browningia	1	Eriosyce	4	Lophocereus
1	Calymmanthium	1	Erythrorhopsalis	3	Lophophora
1	Carnegia	19	Escobaria	32	Loxanthocereus
1	Castellanosia	1	Escontria	2	Machaerocereus
1	Cephalocereus	6	Espostoa	5	Maihuenia
4	Cephalocleistocactus	7	Eulychnia	1	Maihueniopsis
44	Cereus	1	Facheiroa	15	Malacocarpus
1	Chamaecereus	35	Ferocactus	367	Mammillaria
1	Chiapasia	17	Frailea	2	Mamillopsis

.....continued on back side.

Note: As you review Backeberg's list of genera, would you be so kind as to jot down names of genera not listed by Backeberg but listed by other authorities and at a future time a supplemental list will be prepared. Give list to Ye Ed.

CACTUS GENERA --- continued

1 Marenopuntia	1 Ortegocactus	2 Samaipaticereus
1 Marginatocereus	7 Pachycereus	1 Schlumbergera
2 Marniera	87 Parodia	6 Sclerocactus
2 Marshallocereus	2 Pediocactus	24 Selenicereus
13 Natucana	8 Peireskia	4 Seticereus
6 Mediocactus	12 Peireskiopsis	2 Seticleistocactus
17 Mediobivia	2 Pelecypora	1 Setiechinopsis
41 Melocactus	10 Peniocereus	7 Soehrensia
1 Micranthocereus	4 Pfeiffera	1 Solisia
6 Micropuntia	1 Phellosporma	2 Stenocereus
12 Mila	1 Philippicereus	1 Stephanocereus
2 Mitrocereus	1 Pilocanthus	1 Stetsonia
19 Monvillea	1 Pilocopiapoa	1 Strombocactus
1 Morawetzia	64 Pilosocereus	1 Strophocactus
1 Myrtgerocactus		9 Submatucana
4 Myrtillocactus	1 Polaskia	7 Subpilocereus
2 Navajoa	1 Porfiria	18 Sulcorebutia
1 Neoabbottia	2 Pseudoespostoa	2 Tacinga
6 Neobesseyia	24 Pseudolobivia	81 Tephrocactus
4 Neobinghamia	1 Pseudonopalxochia	19 Thelocactus
4 Neobuxbaumia	3 Pseudorhopsalis	3 Thrixanthocereus
1 Neocardenasia	1 Pseudozygocactus	1 Toumeyia
55 Neochilena	7 Pterocactus	47 Trichocereus
3 Neodawsonia	1 Pterocereus	9 Turbinicarpus
1 Neogomesia	3 Pygmaocereus	1 Utahia
8 Neolloydia	11 Pyrrhocactus	1 Vatricania
22 Neoporteria	5 Quiabentia	10 Weberbauerocereus
4 Neoraimondia	4 Rathbunia	4 Weberocereus
1 Neowerdermannia	1 Rauhocereus	17 Woiingartia
10 Nopalea	3 Reicheocactus	2 Werckleocereus
2 Nopalxochia	1 Rhipsalidopsis	8 Wilcoxia
16 Notocactus	65 Rhipsalis	1 Wilmattea
6 Nyctocereus	16 Rhodocactus	1 Winterocereus
1 Obregonia	9 Ritterocereus	2 Wittia
258 Opuntia	3 Rodentiophila	1 Zehntnerella
6 Oreocereus	1 Rooksbya	
5 Oroya	4 Roseocactus	1 Zygocactus
	1 Roseocereus	

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GENERA WITH MOST SPECIES IN NUMERICAL SEQUENCE --- 50 or more.

367 Mammillaria	86 Echinocereus	65 Rhipsalis
258 Opuntia	81 Tephrocactus	64 Pilocereus
106 Lobivia	79 Gymnocalycium	55 Neochilena
87 Parodia	67 Coryphantha	50 Cleistocactus

..... 69 monotypes

230 genera listed by Backeberg
2847 species " " "
varieties not counted

A CHALLENGE

From Mr. "B"

"Dear Mr. Scott:

I have on occasions read your

Club bulletin "Espinasy Flores". It is a splendid publication. I particularly note that contributors enjoy wide latitude of expression and privilege of subject matter. Articles are informative and interesting, as well as entertaining.

With "latitude and privilege" in mind, I inclose a short article involving plant life as related to PHOTOSYNTHESIS AND RESPIRATION. At the outset let me make it clear, I am not a botanist, altho I might possibly qualify as a "neoBotanist" using their terms. I do find plants and books do constitute a two-phase hobby, first with books in the library and thereafter in the garden among the plants.

You may title my article simply as "Botany Bits" and use the initial "B" to identify the contributor. I wish to remain anonymous. My wish is that my effort may afford an incentive to others who are better informed and qualified than I in botany to contribute to "E y F".....a challenge!

If botanically oriented material is desired by your readers, there is no end or limit to interesting materials which could be developed bit by bit.

Good reading to your members, and power to plants. Signed: "Mr. B"

BOTANY "BITS"

by Mr. "B"

A previous issue of "Espinasy Flores", April '72, portrayed in sketch form the process of "photosynthesis"

hereinafter referred to as "PS" for simplicity. PS is only one chapter in the total story. These remarks should be regarded only as supplemental for the purpose of bringing out additional info about plant life, growth and processes. PS is only a portion of the life process in plants. The full process, or "cycle" if you will, involves respiration as well as PS.

In the case of PS, carbon dioxide is taken in and oxygen is released. The remaining carbon is combined with hydrogen and oxygen, as shown in the sketch, to produce or manufacture sucrose or plant sugar or food. For respiration, the flow of gases is reversed. There must be, therefore, considerable movement of gases between cells, and between cells and their environment. The balance of exchange between different gases varies not only between different plants, but also in any one plant throughout the day.

In sunlight, the rate of PS is much greater than that of respiration resulting in a net influx of carbon dioxide and loss of oxygen. But at night respiration is not accompanied by PS--no sun, no energy. The exchange at night involves a net loss of carbon dioxide.

In lower and simpler plants, gases are simply exchanged through the cell or plant surface and no special structures are required. With increase in size and complexity of plants, diffusion through outermost cell walls is not sufficient to support all plant requirements. In a tissue of tightly packed cells, the inner ones suffer from a lack of certain gases and an excess of others by continued production. Plant tissues therefore incorporate numerous small spaces or channels which connect with each other and with the outside, often by pores. In lower land plants, these pores are simple holes, but in higher plants these pores have become specialized "stomata". (Stoma, GR. "mouth", stomata plural.)

Next time "STOMATA".

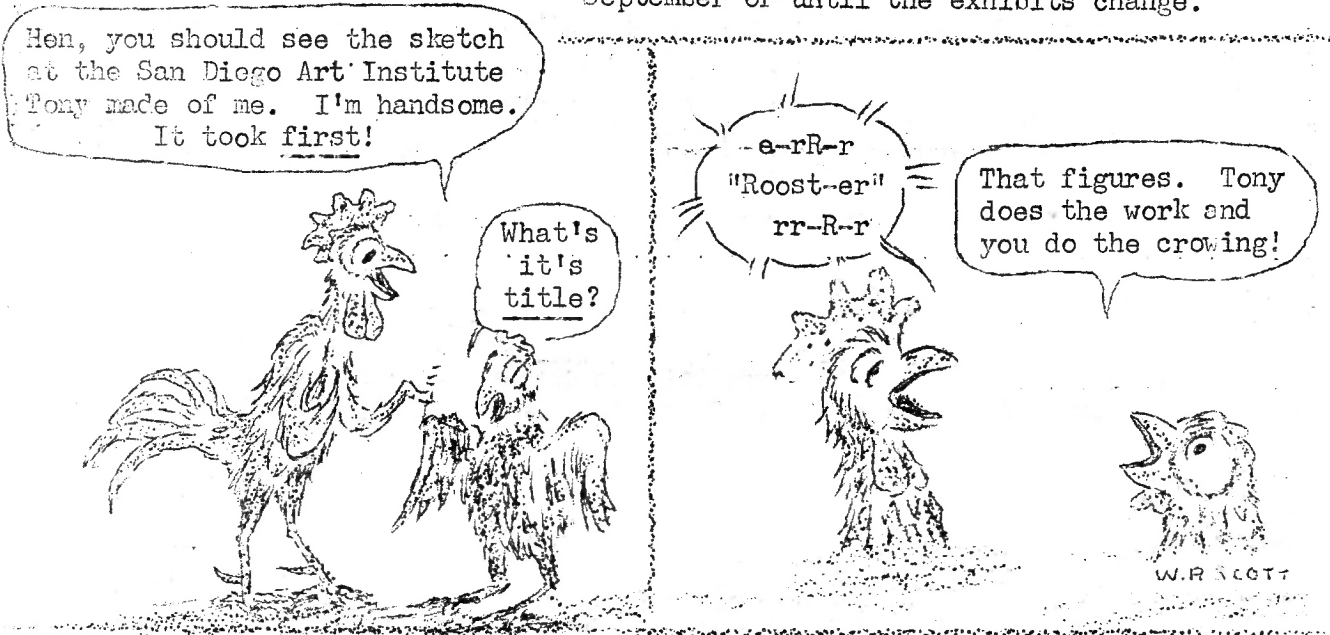
Thank you Mr. "B". Your idea and presentation are stimulating. I can't imagine anyone not being interested in "Bits". Shangrila us again soon.Ed

A NEW MEMBER WANTS TO KNOW !!

Quote: "As a new member I would appreciate knowing something about the Club's policies and customs. A mimeographed handout sheet would be helpful. Tell me about:

1. The plant table.
2. The plant sales table.
3. The library books.
4. How the refreshments are provided.
5. Who may sell plants at the meetings. (I have seen both children and adults who seem to have plants for sale.)
6. The regular meeting date, time and place.
7. The trips to gardens and growers. cjw"

.....
Tony D'Attilio's pen and ink drawing titled "Rooster" (just the head) really is something to crow about. Based on technical proficiency and superb craftsmanship, it won the blue ribbon in September at the San Diego Art Institute in Balboa Park. It will be on display during September or until the exhibits change.



A PROFOUND* CONTRIBUTION

"Dear Walter: The Editor of this bulletin has at various times seen fit to attribute to me remarks revealing either knowledge or astuteness which I don't recall ever having put into so many words. I feel constrained to add some, truly from my pen, at this time.

Did I say "truly from my pen"? There I go assuming unconsciously again the guise of wisdom and sagacity which I so love to feel is my own. Yet how much is "truly from my pen"? What have I gained from a lifetime of keeping my nose in books; what have I learned from the living experiences of my fellow men; and what indeed have I learned from my own life?

These are the many questions which I ask myself often but "sad to relate" as the saying goes, words which I have snatched from back in time, from someone, somewhere, I can only say that I have but few answers. In the irretrievable past I saw the time when I would become a wise old man and now that that time is upon me, only profound doubts remain of myself and the meaning of all that I have tried to learn and accomplish.

However if our kind Editor will have me, perhaps as time goes on, I will add my "dos centavos" worth of written words to this most entertaining "Espinas y Flores" and share with my friends as well as I can, my little knowledge if not at times my many doubts."

*Profound: Intellectually deep.

12 *Anthony D'Attilio*

WHAT'S OLD IS NEW

By Carol Jean Wolcott

What's new that's new? The work on the Natural History Museum shore exhibit is new. What's new that's old? The large fossils on exhibit, some hidden behind the walls for years, are old but "new".

This was to be the story of the duck-billed dinosaur and how it came to our Natural History Museum, but it has turned out to be the story of Charles H. Sternberg who collected this dinosaur and the other large fossils the San Diego Society of Natural History is privileged to own.

Charles Sternberg grew up in Otsego County, New York where his father was a minister and professor of theology. A childhood accident crippled one of Sternberg's legs and later he also lost the hearing from one ear.

From the very beginning Sternberg was a nature lover. He loved all things in nature, the wildflowers in particular. Even in those early days he would cut fossil shells from the limestone strata of the region. So little was known of paleontology at that time that people believed fossil mollusks were merely curiously shaped rocks formed in the likeness of shells.

In 1885, when Sternberg was 15 years old his father accepted the principalship of the Iowa Luthern College and the family moved to the Middle West. Two years later, with his twin brother, Sternberg emigrated to an older brother's ranch in Ellsworth County Kansas; two and a half miles south of Fort Harker in an area later known as Kanopolis.

Sternberg recalled seeing large herds of buffalo and antelope in those days. Hostile indians were a constant threat. Also, just as life would become a little peaceful and dull, resentment, residual from the Civil War would ignite as friction between the southern cowboys and the Army. The cowboys would usually instigate some prank to needle the Army.

Those small western towns were almost as rough as TV would have us believe. Sternberg could remember when, "The dead-cart would pass down the street every morning to pick up the bodies of those who had been killed in the saloons the night before and thrown out in the street to be hauled away." This passed when the tough guys either killed each other off or moved further West with the railroad.

At 17, Sternberg made up his mind as to what part he should play in life and determined whatever it might cost him in privation, danger and solitude, he would make it his business to collect the facts from the crust of the earth. That thus men might learn more of "the introduction and succession of life on earth".

His father was unable to see the practical side of this work. He told Charles that if he had been a rich man's son, fossil collecting would doubtless be an enjoyable way of passing his time, but he, Charles, would have to earn a living and ought to turn to some other vocation. Sternberg recalled in later years, that although his struggle for a livelihood had been hard and often bitter, he was always financially better off as a collector than as a farmer or in some other business.

With his collecting bag over his shoulder, pick in hand, this teenager wandered over the hills of Ellsworth County, Kansas. If he chanced upon a locality rich in fossils, he would, "Thrill with a joy that knew no comparison".

Among his early specimens were many beautiful prints of leaves. His first collection, or at least the best part of it, was sent to the Smithsonian in 1870. Later some of his specimens were sent to Dr. John S. Newberry, a professor at Columbia University and State Geologist of Ohio.

Dr. Leo Lesquerreux, who published a famous work, "The Cretaceous Flora", about 1872, became a friend of Sternberg's. In 1888 Sternberg sent over 3000 leaf impressions from the Dakota sandstone of Kansas to Dr. Lesquerreux. From these over 350 typical specimens, many of them new, were selected for the National Museum. Hundreds of others, identified by Dr. Lesquerreux, were afterward purchased by a Pennsylvania benefactor and presented to the museum.

After Lesquerreux's death, Sternberg undertook the work of identification himself although he had never had botanical training. He collected another 3000 specimens and of these 250 were sold to the New York Botanical Garden. The botanist there seemed to think that Sternberg's identification of these specimens was correct. Later about 1898, the remainder of the collection was sold to the University of Iowa for about \$350.

With the money from the fossil leaves, Sternberg and his son, George, were able to go into the chalk of Kansas where they discovered a splendid specimen of a Mosasaur, which was sent to the museum of Iowa University. In those days there were three genera of Mosasaurs in Kansas. They were named by the celebrated Frenchman, Cuvier, in 1808. The word mosasaur literally means "a reptile of the Meuse". The first specimen was taken from the quarries under the city of Maestricht on the River Meuse.

The winter of 1875-1876 Sternberg spent as a student at Kansas State Agricultural College. About this time he wrote to Prof. E. D. Cope of Philadelphia who was gaining recognition and fame in Paleontology. Dr. Cope sent Sternberg \$300 to finance an expedition to collect fossils. Descriptions of this expedition mention collecting additional mosasaurs and the huge fish Portheus.

(To be continued in Dec.)

Carlsbad, CA
Oct. 13, '72

"Dear Sir Walter":

I was so pleased to have been given "sweepstakes" for Echeverias on Saturday; I took for my reward that pretty blue flat flower holder. I never dreamed my plants would be chosen when I took them. I am about the farthest away from Casa del Prado. I felt that because of the contrast of each in relation to the other, more interest could be aroused.

The little magenta flowered senecio on the President's desk is one I bought from I.S.I. in April--quite unusual in flower color. A piece broke off it in handling and I placed it in the container at the base of the plant. Someone decided he or she wanted it more than I. I had intended to give it to _____. This is not the first plant part that has been taken. This may be the reason some members hesitate to bring special plants for display or contest. This particular plant cost me \$2.50 and the missing part is larger than the original plant. Do you think mention of this in "Espinass y Flores" would serve a good purpose?
Ruth Stanton

(Ruth: Regard this problem as having been called to the attention of members of the Club and of the Board by your letter. Most members are more than willing to share or exchange plants or parts, or to arrange for future sharing, if they know someone wants a part. Shall we let the Board consider the matter and take appropriate action? Thanks for your very delightful letter.Ed)

IT'S A BIG POND .

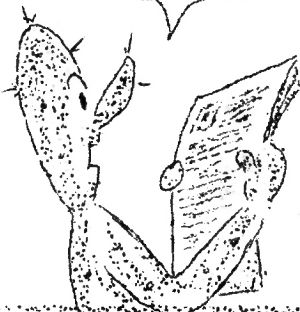
"Hamilton, New Zealand

Dear Walter:Back issues of "E y F" arrived today, 3 October, they were postmarked 31 July. "E y F" really looks good, I see many interesting articles, some of them just what we need badly, example "George Engleman" April '72 issue. I have received a letter from Maria Reeder, half English, half Spanish. I'm composing a half-and-half reply.
Pat

(Pat: Nibby is responsible for "Engleman" and much other delightful material in "E y F". And you got the very best "pen pal" in our Club--Maria Reeder. You should go to the head of your class. How do you say "pen pal" in Espanol? ?? ??? And now a computation: July 1 day, August 31 days, Sept. 30 days, October 3 days---- for a total of 65 days. It was winter in July in New Zealand, wasn't it, and you wouldn't blame the boat crew for stopping over in Pago Pago (or Tahiti) enroute southwest, would you? Maybe you would have done the same. Ed)

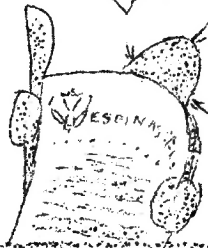
OCTOBER · RIGHT HERE AT THIS POINT would you all rise and say "thank you" to
GOODIES · Dot ROMSKE, Virginia BUCKNER, Evelyn CHATHAM, Jean Hapeman & JULIANNE!

Mr. "B" says: "The inner cells in plants sometimes suffer from lack of certain gases and an excess of others."



B-U-R-P
EXCUSE ME!

I must have an
excess !



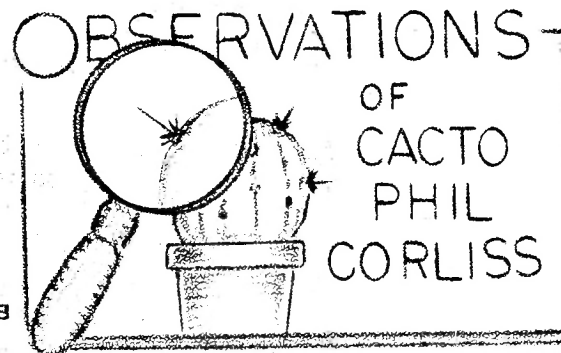
I wonder if there's
such a thing as
plant TUMS?



W.R. SCOTT

WHICH INSECTICIDE TODAY ?

What is written here applies only to the control of insects and not fungus or virus. The control of the two latter is difficult at best and prevention by good culture is the most practical answer. For cactus growers, the principal insects involved are mealy bug, scale, red spider, and larva. The larvae include caterpillars and soil larvae such as those of the scarid fly (whose depredation of cactus seedlings can be catastrophic).



In choosing an insecticide one must consider the danger to human or pet, effectiveness and/or specificity, and possible phytotoxic action. DDT, malathion, and nicotine are relatively safe for the user but unfortunately they are not very effective against most cactus pests. In addition, malathion is toxic to crassulaceae and related plants and nicotine is toxic to tomatoes and related plants. More effective are the "systemic" insecticides, absorbed by the plant and fatal to suckers and chewers. These include cygon, isotox, and systox, which are very dangerous. Parathion, used as a dust, is also very effective but is so dangerous that it is not available for the home gardener. The systemics may be applied as a spray or a soil drench. Manufacturers rarely list plants that are sensitive to them. I have previously noted the toxic effect of cygon on members of the lily and amaryllis family (aloes and agaves, etc.) and I am constantly finding other susceptible plants. Recently I used cygon on some "Lion's Tail" that was heavily infested with white fly. The plants were promptly defoliated but like the aloes and agaves, they did recover. Mealy bugs have attacked Jose's watermelons and almost everything in the garden. They are spread by ants and it takes a lot of malathion to hold them in check. We use 5% or 10% malathion dust on the ants' trails as there are too many crassulaceae to risk the spray. The dust is effective but its strength is quickly dissipated.

Red spider is a serious threat to cactus, and one that is not often recognized. Some strains are immune to most of the insecticides, including malathion. Kelthane is specific for them. But kelthane is toxic to many other plants, such as hemerocallis, and should be used in rather weak dilutions if other plants are to be exposed to it.

One of our members (Mr. W. Dodd of Phoenix) has suggested the use of Ortho's "Three-Way Rose and Flower Care". It comes in granular form and should be sprinkled on the surface or worked into the soil and watered-in. It contains a pre-emergence weedicide, insecticide, and fertilizer. I used it in a bed containing many of my best spuria iris, which were just beginning their new growth. All the foliage turned brown and I feared I would lose them. They have recovered, but are far behind the iris in other beds. I would use it only for robust shrubs or perhaps cactus in pots.

Chewing insects (caterpillars, snails, etc.) are best controlled by spraying with "Polytrap" (bubble gum) but new growth requires frequent spraying for complete protection. The insects choke to death on the gum which they cannot digest.

The best control at present would seem to include the use of cygon as a systemic poison, malathion for ant control, and Polytrap for caterpillars. Kelthane (see above) may be used for red spider. Washing plants and roots infested with mealy bug and cleaning plant bodies with rubbing alcohol for control of scale are good auxiliary measures.

I will bring a display of fraileas to the November meeting. This genus of small-bodied plants is receiving much interest recently as many new varieties are being discovered.

Next Month: How Much Sun ?

Nov. '72

• SAN DIEGO CACTUS & SUCCULENT SOCIETY •
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 • Cactus & Succulent Society of America •
 • ----- •
 • "Espinasy Flores" monthly bulletin •
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PERMANENT ADDRESS: Room 104, Casa del Prado, Balboa Park, San Diego, CA 92101

MEETINGS: Regularly held on the first Saturday of each month, unless otherwise scheduled, at 1:30 p.m. in Room 101 (Majorca Room) Casa del Prado, Balboa Park, San Diego, California. NOVEMBER MEETING in ROOM 104

ELECTION OF OFFICERS AND DIRECTORS at December meeting, Dec. 2nd, 1972

I N S E C T C O N T R O L

NO PEST STRIP method:

From an article in the Succulent Journal of the New Jersey C & S Society edited by A. Byron Greenburg, Montclair, New Jersey.

We offer what seems to be a very efficient method of eradicating unwanted insects as described by Edelweiss Gardens, Robbinsville, New Jersey, in four easy steps.

- 1 -- Fill container with soil and insert stick which will be taller than potted plants to be treated.
- 2 -- Cover stick and plants with a plastic sheet (without holes) in the manner of a pole and tent.
- 3 -- Put a "NO PEST STRIP" which contains Vapona inside the sealed off area and leave it there from 1 to 5 days according to the pugnacity and resistance and virility of the insect hosts, which resistance you will have to determine. White flies seem to be most vulnerable and ordinarily succumb overnight. Repeat treatment at intervals as necessary to accommodate new generations from eggs. The method functions in a manner similar to an oxygen tent and a patient in a hospital.
- 4 -- And don't forget to put plants with host insects in the "tent" -- all that preparation and no subjects and/or victims.

NEXT STEP- Would someone in the Club like to "experiment" with the method and theory. Are you reading Steve? If the light turned green would you GO AHEAD and determine the facts and come up with a report later? It would make for a good program, too. We should like to know WHICH insects are vulnerable, in addition to white flies, including aphids, leaf hoppers, mealy bugs, scale, saw bugs-----and even worms. And how long it takes the system to succeed. And don't forget and report on what happens to the plants tested (oops, treated). You could even improve on the setup and streamline it a-la-Steve! Any other volunteers, outside the tent, that is.